WORRY AND ITS PSYCHOLOGICAL DISORDERS

Theory, Assessment and Treatment

Edited by

Graham C.L. Davey
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and

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WORRY AND ITS PSYCHOLOGICAL DISORDERS

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CONTENTS

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PREFACE

We all worry about things to some degree—and, indeed, many people find it beneficial to think about how they might deal with challenging future events. Of course thinking about future events need not take the form of worry, and important distinctions have been made between worry and other types of thinking. Despite the normality of worry it can become a pervasive daily activity and develop a number of features that make it disabling and a source of extreme emotional discomfort. For example, (1) worrying becomes a chronic and pathological activity that is not only directed at major life issues (e.g. health, finances, relationships, work-related matters), but also to many minor day-to-day issues and hassles that others would not perceive as threatening, (2) worrying is perceived as uncontrollable—the individual experiencing pathological worry usually feels they cannot control either the onset or termination of a worry bout, and (3) worrying is closely associated with catastrophising leading to increasing levels of anxiety and distress, which can seem to make the problem *worse* rather than better. Worry is the cardinal diagnostic feature of generalised anxiety disorder (GAD), but is also a prominent feature of most other anxiety disorders, including specific phobias, obsessive-compulsive disorder, panic disorder, and PTSD.

This volume covers the nature, theory, assessment, and treatment of worry and illustrates the role of worry and its treatment across a range of disorders. The audience for whom this book is intended is clinical psychologists, clinical researchers, students studying clinical or abnormal psychology at advanced level, postgraduate research students involved in clinical research and experimental psychopathology, and those employed in disciplines closely related to clinical psychology (e.g. psychiatry, psychiatric nursing, counselling). The book is divided into four parts designed to give an up-to-date and inclusive overview of all important aspects of worrying, including the nature of worry across a range of disorders, the assessment of worry, contemporary theories of worry, and methods of treatment for worrying. Chapters are written by international experts in each of these areas, and we believe the book will provide an invaluable resource for both researchers and practitioners.

In Part I, The Nature of Worry, there are chapters covering the epidemiology of worry and generalised anxiety disorder (Holaway, Rodebaugh &

Heimberg), the role of worry and rumination in depression (Papageorgiou), and in anxious psychopathology generally (Purdon & Harrington). This section also covers the role that information processing biases play in pathological worrying (Matthews & Funke), and describes the nature of worry in older adults (Wetherell) and in children and adolescents (Cartwright-Hatton).

Part II looks in some detail at the assessment of worry, including the uses and psychometric properties of the Penn State Worry Questionnaire (Startup & Erickson), the Anxious Thoughts Inventory and closely related concepts (Wells). It also includes a thorough discussion of assessment in generalised anxiety disorder (Turk & Wolanin), as well as some potential clinical and research uses of the catastrophising interview procedure (Davey).

Part III deals with recent theories accounting for the development and maintenance of pathological worry and generalized anxiety disorder. Chapters in this section focus on concepts that include the role of metacognition (Wells), and intolerance of uncertainty (Koerner & Dugas) in maintaining chronic and pathological worrying. Chapters also address the causes of the perseverative nature of pathological worrying (Davey), and the view that worry serves an anxiety-maintaining avoidant function (Sibrava & Borkovec).

The final part deals with the treatment of pathological worrying, and the approaches described include Metacognitive Therapy (Wells), Applied Relaxation and Cognitive Therapy (Borkovec), Cognitive-Behavioral treatments targeting intolerance of uncertainty (Robichaud & Dugas), and Pharmacological treatments (Anderson & Palm). Because pathological worrying is a characteristic of a range of psychological disorders, the treatment of worry across disorders using a case-formulation approach is presented (King). Finally, the effectiveness of worry treatments is reviewed in chapters discussing the efficacy of psychological treatments for generalised anxiety disorder (Fisher) and the predictors of treatment outcome (Durham).

As an edited volume, we hope this book provides an integrated set of contributions reflecting conceptual and practical methods for understanding, assessing and working with worry and its associated dysfunctions.

Graham Davey
Adrian Wells
July 2005

Part I

THE NATURE OF WORRY

Chapter 1

THE EPIDEMIOLOGY OF WORRY AND GENERALIZED ANXIETY DISORDER

Robert M. Holaway, Thomas L. Rodebaugh and Richard G. Heimberg

THE EPIDEMIOLOGY OF WORRY AND GENERALIZED ANXIETY DISORDER

Once considered synonymous with the cognitive components of anxiety (Mathews, 1990; O'Neill, 1985), worry has emerged as a more specific construct that can not only be distinguished from a larger subset of cognitive aspects of anxiety, but also studied in its own right (Davey, 1993; Davey, Hampton, Farrell & Davidson, 1992; Zebb & Beck, 1998). One of the first attempts to define worry was provided by Borkovec, Robinson, Pruzinsky, and DePree (1983, p. 10):

> Worry is a chain of thoughts and images, negatively affect-laden and relatively uncontrollable; it represents an attempt to engage in mental problem-solving on an issue whose outcome is uncertain but contains the possibility of one or more negative outcomes; consequently, worry relates closely to the fear process.

More recent formulations have extended this definition of worry, describing it as an anxious apprehension for future, negative events (Barlow, 2002) that involves "a predominance of negatively valenced verbal thought activity" and minimal levels of imagery (Borkovec, Ray & Stober, 1998, p. 562). These definitions have been largely derived from participants' reports regarding what they do when they worry.

Research on the epidemiology of worry has largely evolved over the past 20 years. Much research appears to have been spurred by the adoption of worry as the essential feature of generalized anxiety disorder (GAD) in the revised, third edition of the *Diagnostic and Statistical Manual of Mental*

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Disorders (DSM-III-R; American Psychiatric Association [APA], 1987). These studies have provided valuable data regarding the prevalence, content, and functions of worry and GAD. In this chapter, we review the existing research on the prevalence and phenomenology of worry (both normal and pathological) and GAD and available data on gender, age, ethnic, and cultural differences in the manifestation and occurrence of both phenomena.

The Phenomenology of Normal and Pathological Worry

Few empirical studies have actually examined the occurrence and phenomenology of worry independent of GAD (Tallis, Davey & Capuzzo, 1994). As a result, much of our empirical understanding regarding what actually occurs when people worry, what they most often worry about, and how frequently they worry has been derived from examinations of nonanxious control groups. As noted by Ruscio (2002), these studies may not provide an accurate representation of the frequency and manifestation of normal worry because participants in these groups have been selected based on low worry scores and an absence of anxiety. In much of the empirical literature, normal worry has been regarded as "mild, transient, generally limited in scope, and experienced by the majority of individuals" (Ruscio, 2002, p. 378). However, without adequate studies of worry in normal individuals (i.e., not simply low-anxiety individuals), it is difficult to determine how much the above perception is based on specific characteristics of the available samples.

Tallis and colleagues (1994) conducted one of the few direct examinations of the phenomenology of non-pathological worry. In a mixed sample of 128 university students and working adults (aged 18–59), 38% reported worrying at least once per day; 19.4% indicated they worried once every 2–3 days; and 15.3% reported they worried about once a month. It is unclear how frequently the remaining 27.3% experienced worry. Participants were also asked how long their worry episodes typically lasted. About 24% reported that their worries were fleeting or lasted less than 1 minute, and 38% endorsed a typical duration of 1–10 minutes. The remainder endorsed longer durations of their typical worry (18%, 10–60 minutes; 11%, 1–2 hours; 9%, two hours or more). In addition, participants reported that they most often worried during the late evening or early morning hours and that their worries frequently occurred in response to impending matters, such as upcoming events or interpersonal interactions (Tallis et al., 1994). Participants' mean score on a measure of pathological worry fell in the moderate range and was significantly lower than scores typically associated with a diagnosis of GAD (see Fresco, Mennin, Heimberg & Turk,

2003; Molina & Borkovec, 1994). In terms of worry content, 17% of respondents reported they worried most often about their competence at work, followed by academic performance (11%), health issues (10%), financial circumstances (10%), and intimate relationships (9%). Finally, 83% of respondents reported that they believed worry helped them to find solutions to problems in their environment (Tallis et al., 1994). This finding is, to some extent, consistent with recent research by Szabó and Lovibond (2002), in which 48% of naturally occurring worry episodes primarily reflected a problem-solving process (i.e., using worry to generate solutions to problematic situations), whereas 17% were characterized as primarily involving the anticipation of negative outcomes. Further examination revealed that more severe levels of worry were associated with reduced problem-solving success, although the causal direction of this relationship is unclear.

Studies have consistently, and perhaps not surprisingly, found that people who experience pathological worry as a part of GAD rate their worry as more pervasive and less controllable than people without pathological worry. Craske, Rapee, Jackel and Barlow (1989) examined several dimensions of worry by comparing individuals with DSM-III-R GAD to a nonanxious control group consisting of friends of clients receiving treatment for anxiety. Both groups reported similar ratings of worry duration, worry aversiveness, attempts to resist worry, anxiety associated with resisting worry, and perceived likelihood of the occurrence of worrisome outcomes. However, individuals in the nonanxious control group reported that they worried, on average, 18.2% of the day during the past month compared to 60.7% reported by the GAD group. In addition, nonanxious individuals rated their worries as more controllable, reported greater success in resisting or reducing their worries, indicated that their worries were more often associated with a specific and discernable precipitant, and perceived their worries to be more realistic than those reported by individuals with GAD. Other studies have also found differences with respect to the pervasiveness of worry, as nonanxious controls have consistently reported fewer worrisome topics than individuals with GAD (Borkovec, Shadick & Hopkins, 1991; Dugas et al., 1998; Hoyer, Becker & Roth, 2001; Roemer, Molina & Borkovec, 1997).

Studies comparing the content of worry among individuals with GAD and nonanxious controls have typically reported on the frequency of specific worry domains: 1) work and school, 2) family and interpersonal relationships, 3) financial issues, 4) illness, health, and injury, and 5) miscellaneous topics (e.g., minor matters, punctuality, home repairs). Across several investigations, roughly one-third of participants' worries, regardless of GAD status, have pertained to family and interpersonal issues (Borkovec et al., 1991; Craske et al., 1989; Roemer et al., 1997). Relationships thus seem to be

a common source of worry, a conclusion further bolstered by two studies finding that over 70% of people with GAD endorsed frequent worry about either family or relationships (Dugas et al., 1998; Sanderson & Barlow, 1990). Contrary to this conclusion, Craske and colleagues (1989) found health and injury to be the most frequently reported topic of worry among individuals with GAD (30.6% of reported worries). However, most studies report health and injury worries to be rather infrequent in both GAD (Borkovec et al., 1991; Dugas et al., 1998; Roemer et al., 1997; Sanderson & Barlow, 1990) and nonanxious control groups (Craske et al., 1989; Roemer et al., 1997).

The most consistent finding regarding differences in worry content between nonanxious controls and GAD samples has pertained to worry regarding miscellaneous topics, such as car troubles or being late for appointments. Across three studies, miscellaneous worry topics reported by nonanxious control groups comprised 0%–19.7% of all reported worries, whereas miscellaneous worries among individuals with GAD comprised between 25.2%–31.3% of reported worries (Borkovec et al., 1991; Craske et al., 1989; Roemer et al., 1997). Other content differences between individuals with and without GAD have been observed with regard to worry about work and school. Two studies found nonanxious controls to report a greater proportion of worries related to work and school (30.4%–36.6%) than individuals with GAD (13.9%–22%) (Craske et al., 1989; Roemer et al., 1997), although Borkovec and colleagues (1991) found the opposite. The conclusion that people in nonanxious control groups worry more about work and school is fairly consistent with Tallis and colleagues' (1994) assessment of non-pathological worry, in which the most frequent topics of concern reported by participants pertained to academic performance and competence at work. Similar to concerns regarding work and school, worries about financial circumstances have generally been more frequently reported by individuals without GAD, as two studies have reported the proportion of total worries pertaining to finances to range from 12.5%–26.1% among nonanxious control groups and 2.8%–8.9% among GAD samples (Borkovec et al., 1991; Craske et al., 1989). However, in contrast, Roemer and colleagues (1997) found individuals with GAD to report a greater proportion of worries related to financial circumstances (10.8%) than nonanxious controls (5.6%).

The studies reviewed above have revealed several similarities and differences in the phenomenology of worry among individuals with and without GAD. Most notably, individuals with GAD spend significantly more time worrying, report more worry topics, and perceive themselves as having considerably less control over their worry than nonanxious controls. In addition, miscellaneous worry topics appear to be more prevalent among individuals with GAD than nonanxious controls. Most similarities

observed between the two groups have regarded the frequency of worries pertaining to family and interpersonal relationships, with roughly a third of all reported worries relating to this topic.

Despite these general patterns, there have been many inconsistencies across studies. Several factors may account for these differences. First, with the exception of Roemer et al. (1997), sample sizes for both GAD and nonanxious control groups have been relatively small (e.g., $n = 13–31$), which may limit external validity. Second, the manner in which the frequency and content of worry was assessed varied by study. For example, whereas participants in the Craske et al. (1989) study monitored and recorded the nature of their worry each day for three weeks, other studies have assessed worry phenomenology using diagnostic interviews (e.g., Roemer et al., 1997). Finally, demographic differences across study samples, especially with respect to age, gender, and employment, may have influenced the frequency of specific worry topics, as these concerns seem likely to shift according to the nature of one's daily life.

Differentiating Pathological Worry from GAD

Recent research by Ruscio, Borkovec, and Ruscio (2001) has provided empirical support for a dimensional structure of worry, suggesting that normal and pathological worry represent opposite ends of a continuum, not discrete constructs. However, in most cases, investigations of normal and pathological worry have typically examined individuals with a diagnosis of GAD and have rarely examined pathological worry independent of GAD, leaving pathological worry outside the context of GAD poorly understood (Ruscio, 2002; Ruscio & Borkovec, 2004).

In an attempt to identify delimiting characteristics of pathological worry and GAD, Ruscio (2002) recently compared high worriers with and without a diagnosis of GAD. Surprisingly, only 20% of individuals who reported experiencing extreme levels of pathological worry (worry scores above the threshold commonly associated with GAD) actually met diagnostic criteria for the disorder. Follow-up analyses indicated that, across two samples, 68%–78% of people who reported high levels of worry but not GAD met only 0–1 of the four required DSM-IV criteria, with chronic/excessive worry and associated distress and impairment best differentiating individuals with GAD from high worriers without GAD (Ruscio, 2002, Study 1). Individuals with GAD also reported greater levels of depression, more frequent worry, and less control over their worry. In a follow-up study, individuals with high levels of worry but without GAD experienced all symptoms of GAD less severely than individuals with GAD, even though

they reported their worry to be excessive and uncontrollable (Ruscio, 2002, Study 2).

Ruscio's (2002) findings underscore the need for future studies to distinguish GAD from pathological worry. Specifically, they suggest that examining differences between worry in normal participants and participants with GAD may not actually provide information about the differences between nonpathological and pathological worry. In a recent comparison of people with high worry who either did or did not have GAD, Ruscio and Borkovec (2004) found that negative beliefs about worry (e.g., "worry is harmful") were specific to participants with GAD. In line with Roemer and colleagues' (1997) position that worry may function as a strategy for avoidance of more emotional topics among persons with GAD, Holaway, Hambrick and Heimberg (2003) found that people with GAD reported experiencing their emotions as more intense and more confusing than people without GAD who experienced high levels of worry. Such results, although preliminary, suggest that pathological worry within the context of GAD may be subject to additional factors (e.g., different beliefs about worry, increased emotion dysregulation) that may render it significantly different from pathological worry without GAD. This caveat should be kept in mind when large-scale epidemiological studies, which concern GAD rather than worry *per se*, are reviewed below.

The Epidemiology of Generalized Anxiety Disorder

Since their first iteration in DSM-III (APA, 1980) to their current version in DSM-IV (APA, 1994), the diagnostic criteria for GAD have been revised repeatedly, with revisions resulting in a greater focus on the presence of excessive and uncontrollable worry, an increase in the required duration of symptoms, fewer required physical symptoms, and the added requirement that worry and associated symptoms be accompanied by significant distress or impairment. In later editions, GAD was no longer considered a residual category that could only be diagnosed in the absence of other anxiety disorders. These significant changes to the structure of GAD have hampered long-term investigations of the course of the disorder and resulted in considerable heterogeneity in studies examining prevalence rates (Kessler, Walters & Wittchen, 2004; Wittchen, Zhao, Kessler & Eaton, 1994). Nevertheless, several epidemiological surveys provide valuable information regarding the prevalence, course, and associated features of GAD.

Prevalence

Table 1.1 shows the current, 12-month, and lifetime prevalence rates for GAD in population-based surveys of adults conducted in several countries

Table 1.1 Prevalence of generalized anxiety disorder in the community

Source	Country	Diagnostic Criteria	Assessment Instrument	Sample Size	Age of Participants	Current Prevalence	12-Month Prevalence	Lifetime Prevalence
Blazer et al., 1991								
ECA, Durham, NC	United States	DSM-III	DIS	3,422	18–65+	1.2%	3.6%	6.6%
ECA, Los Angeles, CA	United States	DSM-III	DIS	2,432	18–65+	1.4%	2.0%	4.1%
ECA, Saint Louis, MO	United States	DSM-III	DIS	2,683	18–65+	1.3%	2.9%	6.6%
Chen et al., 1993	China	DSM-III	DIS	7,229	18–64	—	—	7.8% males/ 11.1% females
Hwu et al., 1989	Taiwan	DSM-III	DIS	5,005	18–64+	—	3.4%	3.7%
Bijl et al., 1998	Netherlands	DSM-III-R	CIDI	7,076	18–64	0.8%	1.2%	2.3%
Faravelli et al., 1989	Italy	DSM-III-R	SADS-L	1,110	15–61+	2.0%	—	3.9%
Kawakami et al., 2004	Japan	DSM-III-R	CIDI	1,029	20–65+	0.8%	—	1.4%
Offord et al., 1996	Canada	DSM-III-R	CIDI	8,116	15–64	—	1.1%	—
Wang et al., 2000	United States	DSM-III-R	CIDI-SF	3,032	25–74	—	3.3%	—
Wittchen et al., 1994	United States	DSM-III-R	CIDI	8,098	15–54	1.6%	3.1%	5.1%
		ICD-10				—	5.0%	8.9%
Jenkins et al., 1997	Great Britain	ICD-10	CIS-R	10,108	16–64	3.1%	—	—
Bhagwanjee et al., 1998	South Africa	DSM-IV	Clinical Interview	354	18–50+	3.7%	—	—
Carter et al., 2001	Germany	DSM-IV	CIDI	4,181	18–65	—	1.5%	—
Hunt et al., 2002	Australia	DSM-IV	CIDI	10,641	18–65+	2.8%	3.6%	—
		ICD-10				3.6%	5.1%	

Note: ECA = Epidemiologic Catchment Area Study; DIS = Diagnostic Interview Schedule; CIDI = Composite International Diagnostic Interview; CIDI-SF = Composite International Diagnostic Interview—Short Form; SADS-L = Schedule for Affective Disorders and Schizophrenia—Lifetime Version; CIS-R = Revised Clinical Interview Schedule.

around the world. Most likely because the diagnostic criteria for GAD in DSM-III-R are more stringent than the criteria in DSM-III, prevalence rates appear to have dropped from studies employing DSM-III to those using DSM-III-R. Though lifetime prevalence rates of DSM-IV GAD among adults in the general population have yet to be reported, existing studies have found the current and 12-month prevalence rates for the disorder to be equivalent to, or perhaps slightly higher than the rates found using the DSM-III-R.

Fewer prevalence data for GAD are available from epidemiological surveys using the *International Classification of Diseases and Related Health Problems, 10th revision* (ICD-10; World Health Organization, 1990). Surveys employing ICD-10 criteria have generally found current and 12-month prevalence rates of GAD to be relatively comparable to those for DSM-III-R and DSM-IV (Hunt et al., 2002; Wittchen et al., 1994) (see Table 1.1). However, larger differences have been observed in lifetime prevalence rates, which have been attributed to the less stringent criteria of ICD-10 (Wittchen et al., 1994). Interestingly, Slade and Andrews (2001) reported that, though ICD-10 and DSM-IV yield similar 12-month prevalence rates for GAD (3.0% and 2.6%, respectively), less than 50% of those diagnosed by one system were also diagnosed by the other, suggesting that the two systems diagnose overlapping, but largely different, groups of people.

The prevalence of GAD has also been assessed in primary care settings. Findings from large scale investigations in several countries indicate that GAD is one of the most frequently diagnosed mental disorders in primary care, with a current prevalence rate between 3.7% and 8% (Maier et al., 2000; Olfson et al., 1997; Ormel et al., 1994; Üstün & Sartorius, 1995) and a 12-month prevalence rate of 10.3% (Ansseau et al., 2004). Among high utilizers of medical care, 21.8% of those who reported significant emotional distress met criteria for a current diagnosis of GAD, whereas 40.3% met criteria for GAD at some point in their lives (Katon et al., 1990). As noted by Wittchen (2002), the higher prevalence of GAD in primary care settings compared to the general population differs from patterns observed in most other anxiety disorders, suggesting that individuals with GAD are likely to be frequent utilizers of health care services.

Age of Onset and Clinical Course

Few population-based surveys have reported the average age of onset of GAD. Based on findings of the Epidemiologic Catchment Area (ECA) study, Blazer and colleagues (1991) reported that age of onset for individuals with GAD was distributed rather evenly across the lifespan. However, investigations of clinical populations have found the typical age of

onset of GAD to occur between the late teens and late 20s, with later onset occurring when GAD develops after another anxiety disorder (Barlow, Blanchard, Vermilyea, Vermilyea & DiNardo, 1986; Brawman-Mintzer et al., 1993; Hoehn-Saric, Hazlett & McLeod 1993; Massion, Warshaw & Keller, 1993; Woodman, Noyes, Black, Schlosser & Yagla, 1999; Yonkers, Massion, Warsaw & Keller, 1996).

Epidemiological surveys and long-term investigations of clinical course have often found GAD to be chronic and unremitting. In the ECA study, 40% of respondents with GAD reported a duration of longer than five years (Blazer et al., 1991), and participants in clinical samples have often reported a duration of more than 20 (Barlow et al., 1986; Woodman et al., 1999; Yonkers et al., 1996). Yonkers and colleagues (1996) found only 40% of individuals with GAD had a full remission of symptoms after two years; the same study later showed a partial remission rate of less than 50% and a full remission rate of 38% after five years (Yonkers, Dyck, Warshaw & Keller, 2000). Among individuals who achieved partial or full remission, 39% and 27% were found to have a full relapse during the five-year follow-up period. Similarly, in a study by Woodman and colleagues (1999), 45% of individuals with GAD were found to reach full remission during a five-year follow-up period; however, only 18% of the sample was in full remission at the five-year assessment point, indicating significant relapse. Factors most predictive of chronicity and relapse in GAD over the long-term have been found to be early age of onset and the presence of comorbid diagnoses, particularly Axis II disorders (Mancuso, Townsend & Mercante, 1993; Massion et al., 2002; Woodman et al., 1999; Yonkers et al., 2000).

Comorbidity and Associated Impairment

Early findings from the ECA study indicated a lifetime diagnosis of DSM-III GAD was associated with at least one additional Axis I disorder in 58% to 65% of respondents, with panic disorder and major depression the most frequent comorbid diagnoses (Blazer et al., 1991). As noted by Kessler and colleagues (2004), high rates of comorbidity for DSM-III GAD observed in early studies resulted in significant modifications to the disorder's diagnostic criteria, particularly the increase in required duration.

Despite these changes, high rates of comorbidity continue to be found. In the National Comorbidity Study (NCS), 66.3% of respondents currently meeting criteria for DSM-III-R GAD and 90.4% of individuals with a lifetime diagnosis were found to meet criteria for at least one additional Axis I diagnosis, with major depression being the most frequent co-occurring disorder (Wittchen et al., 1994). Findings from epidemiological surveys of the 12-month prevalence of DSM-IV GAD show 93.1% of respondents in

one study meeting criteria for an additional Axis I disorder (Carter et al., 2001) and 60.6% of respondents in a separate study meeting criteria for an Axis II disorder (Grant et al., 2005). Though GAD appears to be a highly comorbid disorder in general population studies, Wittchen and colleagues (1994) showed that the frequency of individuals with GAD reporting one or more comorbid diagnoses is not much higher than rates observed in other anxiety or mood disorders.

In clinical studies of individuals with GAD, rates of comorbid Axis I disorders have ranged from 45% to 98% (Barlow et al., 1986; Brawman-Mintzer et al., 1993; DiNardo & Barlow, 1990; Goisman, Goldenberg, Vasile & Keller, 1995; Sanderson, DiNardo, Rapee & Barlow, 1990; Yonkers et al., 1996). Similar to findings in the general population, major depressive disorder has frequently been the most commonly diagnosed comorbid disorder among individuals with GAD, followed by social phobia, specific phobia, and panic disorder (e.g., Brawman-Mintzer et al., 1993; Goisman et al., 1995; Massion et al., 1993). Recent research also found personality disorders to be fairly common among individuals with GAD. For example, 37.7% of individuals with GAD participating in the Harvard/Brown Anxiety Research Program study met criteria for one or more Axis II disorders, with avoidant personality disorder being the most frequent (Dyck et al., 2001).

In addition to high rates of comorbidity, GAD has also been found to be associated with significant impairment in social and occupational functioning (Kessler, DuPont, Berglund & Wittchen, 1999; Maier et al., 2000), as well as reduced quality of life (Massion et al., 1993). In a sample of primary care patients, Olfson and colleagues (1997) found individuals with GAD to report greater disability and more absences from work than individuals without a mental disorder. Similarly, Ormel and colleagues (1994) found individuals with pure GAD to report significantly greater occupational impairment and work absences than individuals without a mental disorder, even after controlling for the presence of co-occurring medical illnesses.

Ethnic and Cross-Cultural Differences

Based on findings from available epidemiological surveys, most countries around the world appear to have a fairly similar prevalence of GAD (see Table 1.1). Genuine cross-cultural differences are difficult to determine given differences in methodology, particularly in diagnostic and assessment methods. However, an examination of ICD-10 GAD across several primary care centers revealed significant differences in prevalence rates between countries, with current GAD prevalence rates highest in Rio de Janeiro, Brazil (22.6%) and lowest in Ankara, Turkey (1.0%; Maier et al., 2000).